

ESTHER JULIANA OCOLA

1101 Hensel Drive Apt. Y31
College Station
Texas, 77840 - 1697

e-mail: eocola@mail.chem.tamu.edu

EDUCATION

- M.S.,** **Major field: Physical Chemistry** **Minor field: Materials Science**
Cornell University, Ithaca, New York, (2002)
GPA: 3.1
Oral defense exam topics: Chemical Kinetics, Quantum Chemistry and Physics of Soft Matter
Special Committee: Dr. Paul Houston (Advisor), Dr. Gregory Ezra and Dr. Ulrich Wiesner
- B.S.,** **Chemistry**
National University of Engineering, Lima, Peru, (1990)
Equivalent GPA: 4 (Top 20% Honor Roll)

RESEARCH AND TEACHING EXPERIENCE

- 2005-
Present **Department of Chemistry, Texas A&M University, College Station, Texas**
Graduate student and general chemistry teaching assistant
Advisor: Dr. Jaan Laane
Field: Physical Chemistry
- 2002-
Present **Department of Chemistry, School of Sciences, National University of Engineering, Lima, Peru**
Research: Head of an interdisciplinary research group dedicated to heterogeneous catalysis
Mid 2004-2005 one-year research project "Catalyzed Production of Hydrogen from Ethanol"
Mid 2003-2004 one-year research project "Preparation and Characterization of Catalysts for the Generation of H₂(g) for its uses in Solid Oxide Fuel Cells"
Assistant Professor: Taught Chemical Kinetics (03 semesters), Physical Chemistry II (01 semester) and General Chemistry (02 semesters).
- 2003 **The Molina's National Agrarian University Language Institute, Lima, Peru**
English teacher of basic, intermediate and advanced level courses.
- 2002 **Department of Chemistry and Chemical Biology, Cornell University, Ithaca, NY**
Became member of Dr. Paul Houston's research group.
- 2000-
2001 **Department of Chemistry and Chemical Biology, Cornell University, Ithaca, NY**
Research assistant: Worked with magic-angle-spinning silicon solid-state Nuclear Magnetic Resonance Spectroscopy at different velocities to determine the presence of iron next to silicon sites of ammonium-modified fluorohectorite to which an iron complex was added. Also worked with static deuterium solid-state Nuclear Magnetic Resonance Spectroscopy of polymer nanocomposites at different temperatures in order to study dynamical changes.
- 1999-
2002 **Department of Chemistry and Chemical Biology, Cornell University, Ithaca, NY**
Teaching assistant: Laboratory instructor in general chemistry CHEM 206, CHEM 207, CHEM 211 and CHEM 208.

- 1996- **Department of Chemistry, School of Sciences, National University of Engineering, Lima, Peru**
 1999 Assistant Professor: Attained a tenure position on March 1999. Taught Instrumental Chemical Analysis, Quantitative Chemical Analysis, Qualitative Chemical Analysis, General Chemistry I and General Chemistry II.
- 1994- **Department of Chemistry, School of Sciences, National University of Engineering, Lima, Peru**
 1995 Research: Performed and wrote the research thesis "Preparation and Characterization of Glass Fiber Reinforced Plastics," to be considered as a professional in Peru. Four related articles were later published in the Peruvian Chemical Society Bulletin between 1995 and 1996, including further analysis.
Teaching assistant: Instructor in Chemical Instrumentation, Physical Chemistry II and General Chemistry I.
- 1993 **Pan American Center for Sanitary Engineering and Environmental Sciences, Pan American Health Organization, World Health Organization, Lima, Peru**
Professional Resident: Performed physical chemical analytical services and did research in order to propose a spectroscopic method to analyze petroleum hydrocarbons in water using the fourth derivative of the UV-visible spectra. Worked with a diode array UV-visible spectrometer and a gas chromatograph among other instruments.
- 1990- **Department of Chemistry, School of Sciences, National University of Engineering, Lima, Peru**
 1992 Teaching assistant: Instructor in Chemical Instrumentation, Physical Chemistry II, Physical Chemistry, Phases Equilibrium, General Chemistry Topics, Chemical Kinetics and General Chemistry.
- 1989 **Peruvian Petroleum Company, Conchan, Lima, Peru (3 months)**
 Research and analytical services. Worked with Atomic Absorption Spectroscopy, Gas Chromatography, and Infrared Spectroscopy among other techniques.
- 1988 **Spectrometry Laboratory, National University of Engineering, Lima, Peru (8 months)**
 Chemical analysis services assistant in Emission Spectroscopy, Atomic Absorption Spectroscopy and X-Ray Diffraction.

RESEARCH GRANTS AWARDED

School of Sciences, National University of Engineering, Peru, one-year research grant, for the project entitled "Catalyzed Production of Hydrogen from Ethanol", July 2004.

School of Sciences, National University of Engineering, Peru, one-year research grant, for the project entitled "Preparation and Characterization of Catalysts for the Generation of H₂(g) for its uses in Solid Oxide Fuel Cells", July 2003

OTHER AWARDS AND HONORS

Board member of the Peruvian Chemical Society, 2003-present

Representative of the Physical Chemistry professors of the Chemistry Department of the School of Sciences, National University of Engineering, at the 6th Annual Meeting of Chemistry and Engineering Chemistry Professors of the Peruvian Association of Schools and Departments of Chemistry and Engineering Chemistry, Lima, Peru, 2003

Head of the Editorial Board of the Peruvian Chemical Society Bulletin, 2003

Advisory Board of the Peruvian Chemical Society Bulletin, 2003

Tenured assistant professor at the National University of Engineering, Lima, Peru, 1999-present

Analytical Professor representative for Peru by the Peruvian Association of Schools and Departments of Chemistry and Chemistry Engineering as South American Analytical professor invited by the American Chemical Society to the American Chemical Society PITTCO'99 Program, Orlando, Florida, USA, 1999

Outstanding status the National University of Engineering to be at the Pan American Center for Sanitary Engineering and Environmental Sciences, Pan American Health Organization, World Health Organization, for ten months, Lima, Peru, 1993

First place in a competitive three-month internship at the Peruvian Petroleum Company, Lima, Peru, 1988

PUBLICATIONS

J.C. Morales, E. Ocola and A. Gutarra, "Oxides of the Series $\text{Li}_x\text{Ni}_{1-x}\text{O}$ ($0.0 \leq x \leq 0.5$) Prepared by the Citrate Complexation Method," *Peruvian Chemical Society Bulletin*, **LXX2**, 52-62 (2003).

E. Ocola, "Influence of Linear Macromolecules over Tension Resistance," *Peruvian Chemical Society Bulletin*, **LXII3**, 133-142 (1996).

E. Ocola, "Influence of Free Radicals over the Fragility of Glass Fiber Reinforced Plastics," *Peruvian Chemical Society Bulletin*, **LXII2**, 80-90 (1996).

E. Ocola, "Preliminary Study of the Resistance to Chemical Attack of Plastics using Vickers Hardness Measurements," *Peruvian Chemical Society Bulletin*, **LXII4**, 253-258 (1995).

E. Ocola, "Molecular Lattice formed by the Polyester of the Resin POLITEK S-258 and Styrene," *Peruvian Chemical Society Bulletin*, **LXII3**, 170-177 (1995).

E. Ocola, "Preparation and Characterization of Glass Fiber Reinforced Plastics," School of Sciences, National University of Engineering, 215 pgs, (1995). (Research thesis to attain the Professional Title)

J. Velasco, E. Ocola and M.L. Castro, "Spectrophotometrical Calibration of Hydrocarbons in Water Samples using Absorbances and Fourth Derivative Values," *Peruvian Chemical Society Bulletin*, **LX2**, 138-144 (1994).

J. Velasco, E. Ocola and M.L. Castro, "Spectrophotometrical Calibration of Hydrocarbons Traces in CHCl_3 , using Values of the Fourth Derivative of the Spectrum and the Corresponding Absorbances," *Peruvian Chemical Society Bulletin*, **LX2**, 133-137 (1994).

J. Velasco, E. Ocola and M.L. Castro, "Calibration with the Fourth Derivative of the UV-Visible Spectrum," *Peruvian Chemical Society Bulletin*, **LX2**, 124-132 (1994).

POSTER

E.J. Ocola, D.-K. Yang and D.B. Zax, "Dynamical Heterogeneity in Polymer Nanocomposites", Polymer Outreach Program, Cornell University, Ithaca, New York, (2001).

ORAL PRESENTATIONS

"Physicochemical 2002 and 2003 research projects developed and in development at the School of Sciences of the National University of Engineering," 6th Annual Meeting of Chemistry and Engineering Chemistry Professors, Peruvian Association of Faculties and Schools of Chemistry and Engineering Chemistry, Lima, Peru, 2003

"Solid NMR of nanocomposites and Dr. Coates' MFO1-141 sample spectra," Nanocomposites Groups Meeting, Cornell University, Ithaca, New York, USA, 2001

"Influence of Linear Macromolecules over Tension Resistance," Physicochemical Section, XIX Peruvian Chemical Society Congress, Lima, Peru, 1995

"Influence of Free Radicals over the Fragility of Glass Fiber Reinforced Plastics, Physicochemical Section, XIX Peruvian Chemical Society Congress, Lima, Peru, 1995

"Preliminary Study of the Resistance to Chemical Attack of Plastics using Vickers Hardness Measurements," Physicochemical Section, XIX Peruvian Chemical Society Congress, Lima, Peru, 1995

"Molecular Lattice formed by the Polyester of the Resin POLITEK S-258 and Styrene," Physicochemical Section, XIX Peruvian Chemical Society Congress, Lima, Peru, 1995

"Spectrophotometrical Calibration of Hydrocarbons in Water Samples using Absorbance and Fourth Derivative Values," Analytical Section, XVIII Peruvian Chemical Society Congress, Lima, Peru, 1993

"Spectrophotometrical Calibration of Hydrocarbon Traces in CHCl_3 using Values of the Fourth Derivative of the Spectrum and the Corresponding Absorbances," Analytical Section, XVIII Peruvian Chemical Society Congress, Lima, Peru, 1993

"Calibration with the Fourth derivative of the UV-Visible Spectrum," Analytical Section, XVIII Peruvian Chemical Society Congress, Lima, Peru, 1993

"Objectives of the Statistical Software for Analytical Quality Control," Seminar-Workshop of Analytical Quality Control and Improvement of Laboratory Methods for the Water Quality Control, Wastewater Equipment Manufacturers Association / National Association of Drinking Water Supplies Agencies, Managua, Nicaragua, 1993

"Laboratory Security," Seminar-Workshop of Analytical Quality Control and Improvement of Laboratory Methods for the Water Quality Control, Wastewater Equipment Manufacturers Association / National Association of Drinking Water Supplies Agencies, Managua, Nicaragua, 1993

"Hazardous Waste Treatment," Hygiene and Security in Laboratories, National Institute of Occupational Health, Lima, Peru, 1993

"Basic Characterization of Glass Fiber Reinforced Plastics," Theoretical Physical Chemistry Section, I Peruvian Physicochemical Journey, Peruvian Chemical Society, Lima, Peru, 1992

OTHER ACTIVITIES

Manager of the Chemical Instrumentation Laboratory, School of Sciences, National University of Engineering, Lima, Peru, 1996

Organizer of the First Cycle of Conferences: Computational Methods of Chemical Analysis, School of Sciences, National University of Engineering, Lima, Peru, 1996

Organizer of ten demonstrative sessions of the computational equipment use in chemical analysis. Activity done in SGS's, MEDIFARMA's, CEPIS's and SCHELL PETROLEUM's laboratories, Lima, Peru, 1996

Responsible of the Chemistry theoretical questions and laboratory activities of the National University of Engineering Olympiads III, Lima, Peru, 1996

In charged of the National University of Engineering School of Sciences Infrared Spectrometer equipment, Lima, Peru, 1995-1997

Organizer of the UV-Visible Spectroscopy with Diode Array Conference by Luis Sotomayor, Hewlett Packard representative, School of Sciences, National University of Engineering, Lima, Peru, 1995

Responsible of the presentation of Chemistry experiments to high school students, School of Sciences, National University of Engineering, Lima, Peru, 1995

AFFILIATIONS

American Chemical Society
Materials Research Society
Peruvian Chemical Society

REFERENCES

Dr. Paul L. Houston
Department of Chemistry and
Chemical Biology
Cornell University
Ithaca, NY 14853-1301
(607) 255-4303
plh2@cornell.edu

Dr. Gregory Ezra
Department of Chemistry and
Chemical Biology
Cornell University
Ithaca, NY 14853-1301
(607) 255-3949
gse1@cornell.edu

Dr. Alonso Castro
Los Alamos National Laboratory
Los Alamos, NM 87545
(505) 665-8044 (voice)
acx@lanl.gov

Dr. Stanley Marcus
(Director of Introductory
Laboratories 1999-2002
Department of Chemistry and
Chemical Biology
Cornell University)
Freeville, NY 13068
(607) 539-7440
stm3@cornell.edu